

**ABSTRACT**

A low temperature rendering process for converting animal trimmings to meat product which can be classified as finely textured meat. The low temperature rendering process includes steps of surface treating the trimmings to kill organisms which may be present on the surface of the trimmings; heating the surface treated animal trimmings in a heat exchanger having a first-in and first-out arrangement to provide heating of the animal trimmings to a temperature in the range of about 32°C to about 43°C to form a heated slurry; separating a solids stream and a liquids stream from the heated slurry, the solids stream containing an increased amount of protein and moisture, and the liquids stream containing an increased amount of tallow, water soluble protein, and moisture; separating a heavy phase and a light phase from the liquids stream, the heavy phase containing an increased amount of moisture and water soluble protein, and the light phase containing an increased amount of tallow; and combining the solids stream and the heavy phase to form a meat product.